Reports / 25X

[redacted]

11 Feb 70

Ch, IEG
Ch, PSG

- The PIR on "Identification of Sov. Naval Ships in Reserve Status" is ideal for the purpose.

[redacted] 25X

SECRET

6 February 1970

MEMORANDUM FOR: Executive Director, National Photographic Interpretation Center

SUBJECT : Evaluation of Method Used to Estimate the Orientation of Soviet SS-9 Silos

REFERENCE : Your Memorandum, Same Subject, Dated 16 January 1970

1. The NPIC evaluation of the method used by ACIC to estimate SS-9 ICBM site orientations is thorough and complete, in short, an excellent job. This evaluation can have an important bearing on judgments about Soviet strategic targeting concepts and plans. With your evaluation in hand, we expect to be doing further work on SS-9 targeting in conjunction with FMSAC.

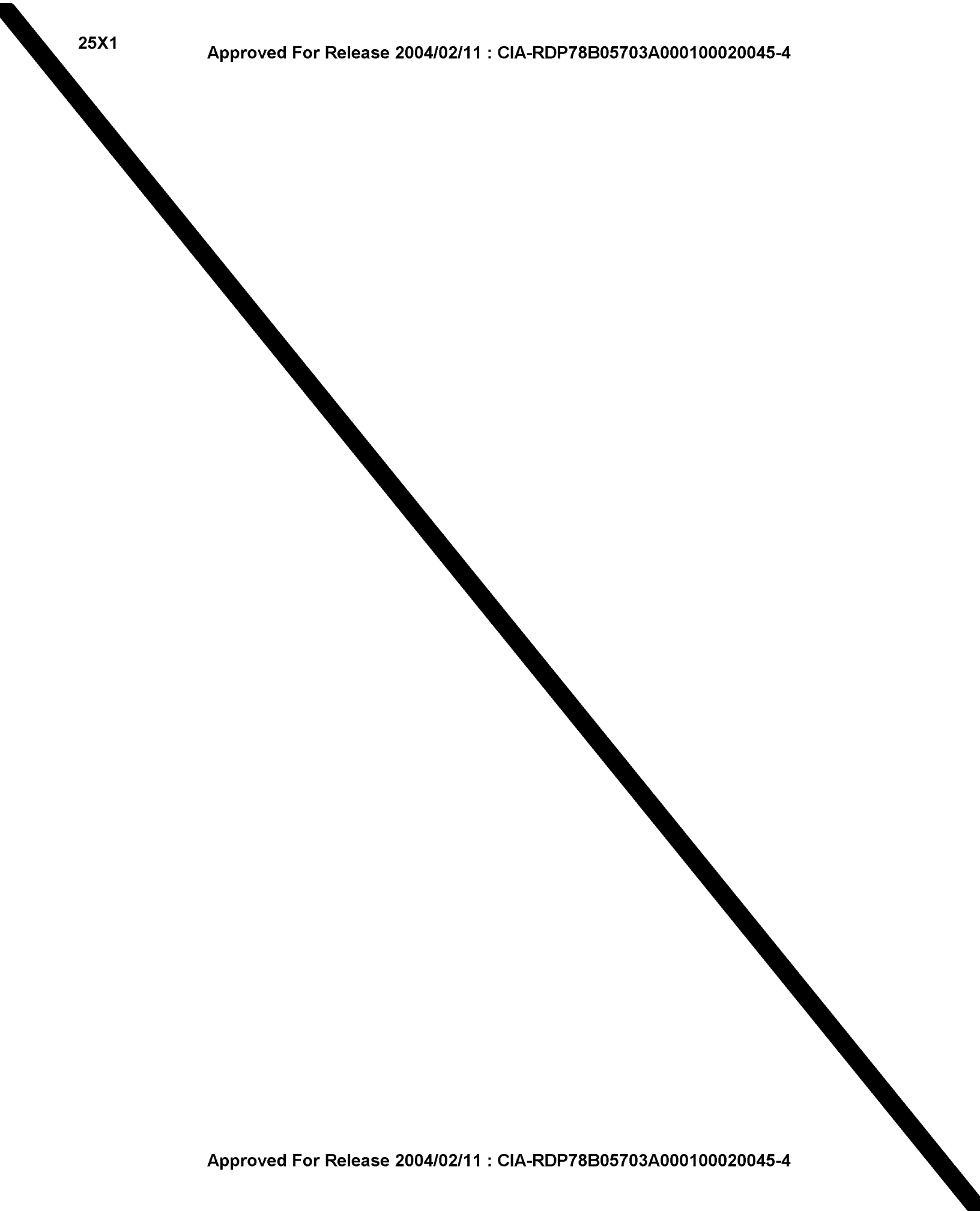
2. Please express our appreciation to [redacted] and the others in NPIC who participated in the study.

X1 25X

25X

[redacted]
Director
Strategic Research

SECRET



Approved For Release 2004/02/11 : CIA-RDP78B05703A000100020045-4

[redacted] 25X

[redacted]

Copy 6

MEMORANDUM FOR: Director of Strategic Research

SUBJECT : Evaluation of Method Used to Estimate the Orientation of Soviet SS-9 Silos

X1 REFERENCE : [redacted] Memo from D/OSR to ExD/NPIC, dated 22 September 1969, Same Subject

1. In response to your referenced memorandum, analytical photogrammetrists from the NPIC Technical Services and Support Group have critically reviewed the ACIC SS-9 launch site orientation studies performed for ARPA.

2. In essence, the NPIC analysts find that they agree with the basic theory of ACIC's primary and auxiliary methods as well as with its evaluation of potential error sources and with the measures taken to control the errors. Your memorandum contained eight specific questions. These are answered individually on pages 10-17 of the
X1 attached report [redacted]

X1 3. Contact [redacted] if there are questions.

[redacted] 25X

Executive Director
National Photographic Interpretation Center

Attachment:
X1 [redacted]

Distribution:
Copy 1 - D/OSR, w/attachment
2 - NPIC/TSSG/PPS, w/o attach.
3 - NPIC/TSSG/APSD, w/o attach.
4 - NPIC/PPBS/RAD, w/o attach.
5-6 - NPIC/ODIR, w/o attach. 25X

X1 NPIC/ODIR: [redacted] 15 Jan 70)

[redacted]

25X1

REQUEST FOR NPIC SUPPORT	READ INSTRUCTIONS ON REVERSE BEFORE COMPLETING FORM	
2. REQUESTING AGENCY C.I.A. SEP 25 1 57 PM '69	3. DATE PREPARED 25 September 1969	4. DATE REQUIRED 25X1
5. OFFICE 25X1 OSR	6. PHONE NO.	7. REQUESTER'S CONTROL NO.
8. REQUESTING OFFICER	9. SUGGESTED JOB TITLE SS-9 Silo Orientation Study	
10. BE NO.	11. COUNTRY CODE UR	

12. DESCRIPTION OF REQUIREMENT AND BACKGROUND INFORMATION

The attached memorandum provides background on a recent study on SS-9 launch site orientations undertaken by [redacted] on behalf of the Advanced Research Projects Agency (ARPA). The measurements for the [redacted] study were made by the Aeronautical Chart and Information Center (ACIC). 25X1 25X1

NPIC is requested to provide an evaluation of the method used by ACIC to estimate site orientations and an objective assessment of the significance that can be attached to the results. The attachment includes a list of specific questions to be considered.

13. SPECIFIC REQUIREMENT

copies went to APS & 9 Chiefs

25X1-01

14. _____
AUTHORIZING OFFICER SIGNATURE

BELOW FOR NPIC/RAD USE ONLY

	DISSEMINATION DATE	PROJECT NO.
		250566

25X1

25 Sept 69

25X1

22 September 1969

MEMORANDUM FOR: Executive Director, National Photographic Intelligence Center

SUBJECT : Evaluation of Method Used to Estimate the Orientation of Soviet SS-9 Silos

1. The results of studies on SS-9 launch site orientations undertaken by [redacted] 25X1
25X1 [redacted] on behalf of the Advanced Research Projects Agency (ARPA) of the DDR&E may provide insights into Soviet strategic targeting concepts and plans. These results are based on a complex methodology involving the use of satellite photography to derive the orientation of SS-9 silo doors. Together with intelligence on site orientations and launch azimuths used at the Soviet ICBM test range, this measurement is believed to provide an indication of the preferred launch azimuth, and thus a means of limiting the number of possible targets to those which lie along the resultant theoretical flight path of the missile.

2. While promising, the method is highly dependent on the accuracy of the angular measurement of the silo door. I am informed that an error of one degree in this measurement could mean a divergence of 60 miles or more from the intended Soviet target at ICBM range. The measurements for the
25X1 [redacted] study were made by the Aeronautical Chart and Information Center (ACIC) in St. Louis, Mo.

3. I would like to be in a position to judge the overall validity of the [redacted] study, but to do 25X1
so I need an evaluation by the National Photographic Intelligence Center of the method used by ACIC to estimate the site orientations and an objective assessment of the significance that can be attached to the results. I am requesting, therefore, that

25X1 [redacted]

25X1 [redacted]

you undertake this evaluation. For guidance, I have attached a list of specific questions I would like to have considered.

4. [redacted] of this office has discussed this matter with [redacted] of your staff. These gentlemen also have consulted with [redacted], Director of ARPA's Strategic Technology Office and [redacted] who monitors the [redacted] project. Both [redacted] expressed their desire to cooperate with us and their willingness to make both personnel and materials available to NPIC in carrying out the evaluation of the study results.

5. I would like to move ahead on this as soon as possible and would appreciate your giving this request your early attention.

[redacted]
Director
Strategic Research

Attachment:
Guidance in Evaluating the
ACIC Azimuth Study, [redacted]

Distribution:
Copy No. 1 and 2 -- Addressee
3 -- ADDI
4 -- D/IAS
5 -- D/FMSAC
6 and7 -- SR/SF
8 -- D/OSR
D/OSR [redacted]

[redacted]

25X1

Attachment

Guidance in Evaluating the ACIC Azimuth Study

1. Describe briefly the method used by ACIC to measure the azimuth of the silo door.

2. What factors in the method most influence the results (e.g. quality of photography, rectification, repetitive coverage)?

3. How does ACIC determine the range of error in the measurement?

4. How useful is measurement of the excavation and the security fence in deriving silo azimuths?

5. What adjustments, if any, are made so that the azimuth is compatible with likely targets in the US?

6. How has ACIC validated this method? How has ACIC demonstrated the capability of the method to yield measurements of plus or minus one degree?

7. What is your opinion of the method, equipment and programs in the ACIC study?

8. What is the size of the present sample? Do you consider the sample size large enough to assure the significance of the results?

Distribution:
Copy No. 1 and 2 -- Addressee
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4 -- D/IAS
5 -- D/FMSAC
6 and 7 -- SR/SF
8 -- D/OSR

25X1 D/OSR [redacted]

25X1

[redacted]

25X1

[redacted]